DATA ANALYSIS OF ROAD ACCIDENTS ON NATIONAL HIGHWAY N5

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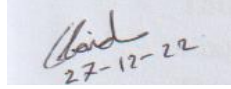
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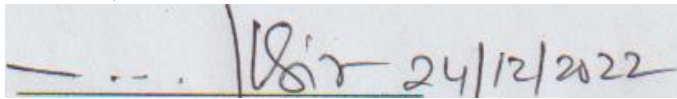
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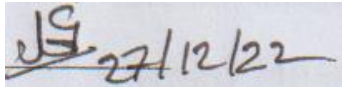Daffodil International University
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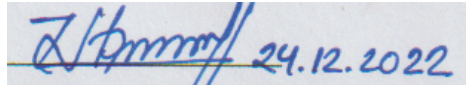
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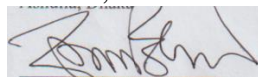
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DECLARATION

This is to certify that the thesis we submitted to the department of Civil Engineering Daffodil International University (DIU) titled "**Data Analysis of Road Accidents on National Highway N5"** is a record of the original research. We carried out under the guidance of Kazi Obaidur Rahman, Assistant Professor, Department of Civil Engineering, Daffodil International University and the thesis hasn't been used for any other awards, degrees, diplomas, fellowships, or other purposes.

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ABSTRACT

Currently, road accidents are the leading causes of injury and death worldwide and have grown to be a major global issue. The high cost of traffic accidents each year has made them a critical issue in Bangladesh and around the world. Allowing its citizens to perish in traffic accidents is completely unacceptable and terrible. But it light of this unavoidable circumstance, careful investigation is needed.

National Highway N5 is the area under investigation in this thesis. This highway connected the three divisions of Dhaka, Rajshahi and Rangpur. N5 highway highways are connecting the city Dhaka with Banglabandha on the Bangladesh-India border. The major focus of the thesis to explore the N5 highway road accident models, which cover both road safety and accident prevention in general, as well as the effects of using a specific model as the basis for actual preventative action. This paper focuses on a few particular parameters a) Road accident incidence rate b) Collision type c) Yearly variation of accident rate d) Accidents in different weather and surface condition e) Road accident factor. The data in the form of accident reports were collected from the yearly, monthly and dailyaccident research institute (ARI), (BUET). This information, which includes the accident's location and specifics for the time period of (2011-2015). According to statistics, 13% of total fatal accident occurs in highway. In most accident about 81% fatal, 13% are grievous, 4% are simple, and 2% are collision in N5 highways. A total number of fatal accidents have a negative effect on Bangladesh's national GDP. The N5 highway's alternatives for improving road safety are discussed in this essay.

ACKNOWLEDGEMENT

First and foremost, we would want to express our sincere gratitude to Allah for bestowing upon us the stamina and endurance necessary to complete this thesis work successfully.

Then, we want to show Mr. Kazi Obaidur Rahman, Assistant professor, Department of Civil Engineering, Daffodil International University (DIU), Dhaka, how much we appreciate him. For his insightful advice, motivation, support and encouragement, as well as his warm encouragement toward the successful completion of this research.

Finally, we would like to express our gratitude to all of our professors, students and parents from the Department of Civil Engineering, Daffodil International University for their support and cooperation throughout the development of this thesis.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Transportation engineering is an important part of civil engineering. There are many parts of transportation engineering. Since Bangladesh's gained its independence in 1971, the transportation industry has expanded quickly and the development of land river transportation modes have started. Air travel was developed later. Bangladesh has made significant progress in the transportation sector, but there are still many issues that prevent the growth of other social and economic sectors. Land vehicles have dominated transportation evolution, but safety standards still need to be raised, endangering the lives of humans. The Ministry of road transport and bridges is the supreme authority in Bangladesh for creating and enforcing laws, rules, and regulations pertaining to bridges, national roads, are road transportation. Within it, there are two minor divisions. Ministry of road transport and Bridges for road safety. Aviation in the civil sector for Ministry of civil aviation and tourism. Transport by sea for Ministry of shipping. Transportation for rail by ministry of railways.

Road accidents and fatalities have increased significantly in recent years. According to a Bangladesh road safety foundation annual study, between January and December of recent times, at least 6,284 people were murdered and 7,468 others were injured in road accidents around the nation. 5,431 people were killed and 7,379 others were injured (RSF). According to the research, the deaths and injuries led to a taka9,631 core loss in human resources.

According to Nirpad Sarak Chai for NSC demand safe roads 5,793 traffic accidents the nations recent history resulted in the deaths of 4,289 persons. Because there is no official organization that keeps track of deaths and injuries in the nation, the figures reported by the two bodies are very different. The main sources of information in this regard are newspapers, television and online news sites.

Professor Dr. Hadiuzzaman of Buet, the director of the accident research institute, sated. Some granulations obtain data form fie daily newspapers, while other organizations may get information from ten dailies. This causes a knowledge gap, he claimed.

AI Mahbub Uddin Ahmed, chairman of RSF and professor at the Department of Sociology at Dhaka University, presented the report, which had been prepared on the basis of news reports published in seven national dailies, five online news portals and television channels.

The organization's head, Ilias kanchan, delivered a report that indicated more traffic accidents, fatalities, and injuries had occurred recently compared to the preceding two years.

NSC gathered information from television, online news sources and 11 national dailies that broadcast news.

"Due to Covid-19, offices, shopping malls, markets and public transport were not open as in previous years. But road accidents increased across the country, nevertheless, which is very alarming," said Ilias Kanchan.

Both organizations claim that a number of factors, including the use of unsafe vehicles on the road, reckless driving, a lack of skilled drivers, mental and physical illnesses among drivers, inadequate benefits for drivers, slow vehicle movement on highways, careless youth bike riding, an ineffective traffic management system, and a lack of public awareness, are to blame for the country's rising rate of road accidents.

To reduce the frequency of accidents of the nation, the organizations have recommended hiring only experienced drivers, bolstering the Bangladesh road transport Authority (BRTA), and enforcing current rules.

1.2 Scope of Research

This thesis is assisting us in figuring out several signs and linkages about the intensity of accidents on the N5 route. This thesis helps us working in the field of transportation engineering research, analysis, several accidents research, design and develops old & new solutions that include but are not limited to Highways and roads.

This thesis contains a variety of facts about accidents in a variety of settings at any time and on any route. By examining accident statistics from the last last 5 years, we have looked to the severity of accidents in a variety of situations (2011-2015). However we analysis serious accident in several ways & how solve the problem by N5 road.

1.3 Targets of the Thesis

Using RTA data for N5 (2011-2015) from ARI, BUET, the thesis primary goal was to investigate the viability and applicability of data analysis approaches in relation to street traffic safety in Bangladesh.

We made an effort to make Bangladesh's heavily traveled highways the main emphasis of the N5 road. Physically and through ARI BUET, we have collected data that we must analyze to determine the problem.

The principal objectives of our research are:

- To study the causes of road accident and some possible solution to it.
- To collect the necessary traffic data on roads
- To reduce the current high rate of road accident.

1.4 Thesis Outline

There are 5 (five) Chapters total in the thesis.

Chapter 1 is including introduction and Motivating Facts, Scope of Research, Targets of the Thesis.

Chapter 2 is including literature review what is road accident, why we need road accident analysis? Discuss various collision types. How do different factors of Roads contribute to Accidents?

Chapter 3 is discuses study area and data mining. This chapter is study area and the research topic and information about data mining.

Chapter 4 is data analysis chapter. We discuses data collection and analysis. This chapter is putting all data by table, figure and pie chart. Discusses some critical parts of road safety.

Chapter 5 has the last chapter of thesis outline. This chapter name is conclusion. This chapter added analyzes data finding, Recommendations and Concluding remarks.

We have included some references and appendices after our all main chapter

CHAPTER 2
LITERATURE REVIEW

2.1 What is Road Accident?

When a vehicle collides with another vehicle, a pedestrian, an animal, road debris, or another stationary barrier like a tree, pole, or structure, the result is a traffic collision, alsoknown as a motor vehicle collision, car accident, or car crash. Traffic accidents frequently result in harm to people and property, as well as financial expenses to society and those affected. The most hazardous condition that people encounter on a regular basisis road travel, but the number of casualties from such accidents receives fewer media coverage than that of other, less common sorts of disaster.

Figure 2.1 A Road Accident of Nabinagar

Why we need road accident analysis?

When data show that more than 3,000 people worldwide die every day as a result of a traffic accident, as well as when road crashes result in estimated global economic losses of US $518 billion annually from traffic injury expenses, road safety becomes a serious public health concern. For developing nations, the enormous economic losses are a financial burden. The cost of traffic accidents in poor nations is projected to be $100 billion, which is double the amount of development money given to those nations each year. Due to the enormous economic losses caused by traffic accidents, which amount to nearly Us 2,500 million annually or 3.4% of the gross national product (GNP).

2.2 Accident or Collision Types.

Accident is occurred many ways in road. Some accident is occurred normal or bad road condition in various road surfaces. Some are occurred cars to man, some are occurred car to car, some are occurred car to animal. So we discuss the various types of accident in some accident or collision

Main road accident or collision is discuses:

01.   Rear End Collision.

02.   Head-On Collision.

03.   Right Angle Collision.

04.   Sideswipe Collision.

05.   Hit object in road.

06.   Rollover Collision.

07.   Hit object off road.

08.   Hit perked vehicle.

09.   Hit Pedestrian.

10.   Hit animal.

11.   Single Car Accident

12.   T-Bone Car Accident

13.   Multiple Vehicle Collision

01. Rear End collision:

When a car collides with the one in front of it from behind, it is called a rear-end collision. Driver inattention or distraction, tailgating, panic stops, and decreased traction because of slick conditions or worn pavement are all common causes of rear-end incidents.

However, they represent 28% of all accidents involving vehicles, making them one of themost common in the country.

Figure 2.2: Rear End Collision.

02. Head-On Collision:

In contrast to a side collision or a rear-end collision, a head-on collision occurs when the front ends of two moving objects such as cars, trains, ships, or airplanes crash when moving in opposing directions .

Figure 2.3: Head-On Collision

03. Right Angle collision:

Right angle collisions happen at junctions when two vehicles traveling in opposite directions come together. Right angle crashes typically fall into one of two categories those that occur when entering traffic has stopped and those that occur when entering traffic ignores a stop or signal.

Figure 2.4: Right angle collision.

Non-signalized crossing sites account for 63% of right angle collisions. When a car stops at a STOP sign, the majority of what happens after that, yet they continue when it is dangerous to do so.

04. Sideswipe Collision:

When two cars crash lengthwise, along the side of each car, it is called a sideswipe accident. The majority of the time, this kind of collision occurs when two cars are driving in the same direction, but it can also happen when two cars are moving in the opposite way.

Sideswipe collisions can occur for a variety of reasons; however the following are the most typical ones:

- Distracted driving while eating out or going somewhere else.
- Distracted driving while applying makeup or getting ready for the day.
- Distracted driving while talking on the phone and not looking for their weak spotwhen choosing a route.

Figure 2.5: sideswipe collision

04. Hit object in road:

Hitting an object lying in the road might hurt your vehicles front end and undercarriage as well as you or other onlookers. You are looking at a collision guarantee on your car protection weather the object is garbage dropped by a pickup truck, a pothole, or a downed tree. A deductible should b paid when documenting a crash guarantee.

Figure 2.6: Hit object (in road)

05. Rollover Collision:

When a vehicle rolls over onto its side or rooftop, this is known as a rollover and is frequently caused by collisions or tricky maneuvers made at high speeds.

Figure 2.7: Rollover collision

Any car is capable of rolling over, but SUVs and taller cars are more likely to do so. Multiple bones in your body can be broken by this impact of a rollover crash. Arms, legs, and ribs are frequently damaged in rollover victims. A shattered bone may also sever an artery or even puncture the lung.

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06. Hit object off road:

A sort of single car collision that happens when a vehicle leaves the roadway is referred to as a runoff road crash in the US.

Figure 2.8: Hit object (off road)

07. Hit perked vehicle:

Figure 2.9: Hit parked vehicles

When a car is hit by another vehicle or damaged by a moving vehicle while it is parked ina space designated for autos.

You're required to take certain steps after hitting a parked car, and fault and insurance rules are the same as with any other kind of car accident.

08. Hit Pedestrian:

Call the police if your vehicle strikes a pedestrian. This is a mandated legal necessity in many states. Additionally, wait until they arrive before leaving the area. If you leave the scene before this, you could face major legal repercussions and be charged with a hit and run accident.

Figure 2.10: Hit pedestrian

09. Hit animal:

When an animal, such as a dog, cow, or elephant, crosses the highway and gets hit by a car. Several wild animals frequently cross and walk on forest site roads. Because of this, when vehicles reach their top speed, animal collisions do too.

Figure 2.11: Hit Animal

10. Single Car Accident:

Although a single vehicle is always involved in a single car accident, this does not necessarily entail that the driver is to blame. Typically occurs when a single driver servers to avoid hitting anything's such as an animal or another vehicle weaving in front of them, and ends up crashing into a guardrail, tree or electricity pole.

Figure 2.12: Single-car accident

11. T-Bone Car Accident:

When on vehicle collides head on with the side of another, it can result in one of the T-Bone car accidents most dangerous collisions. Most typically, this T effect hits the car's driver side, which can result in fractured bones, concussion, and even death.

Figure 2.13: T-Bone car accident

2.3 The main reason causes of road accident.

Accident causes involve a number of things. We can talk about some traffic accidents.

Even though they occur frequently, road accidents are the worst thing that may happen toa road user. The worst part is that we don't learn from our road blunders. The majority of road users are quite aware of the general safety precautions and rules that apply when using the roads, however accidents and wrecks only occur as
a result of road user's negligence.

Human mistake is the primary cause of accidents and crashes. We are describing some of the typical human conduct that leads to accidents.

1. Driving too fast.
2. Impaired driving
3. Driver distractions
4. Running red lights
5. Refusing to wear safety equipment like seatbelts and helmets.
6. Failure to maintain lane discipline and improper overtaking.

These behaviors of road drivers, which cause accidents, have been identified as the most prevalent by numerous domestic and international researchers.

1. Over Speeding:

The majority of fatal incidents are caused by over speeding. Humans have an inherent drive to succeed. Man is capable of speeds that can reach infinite if given the chance. Vehicles traveling faster are more likely to be in accidents, and the severity of those accidents will increase.
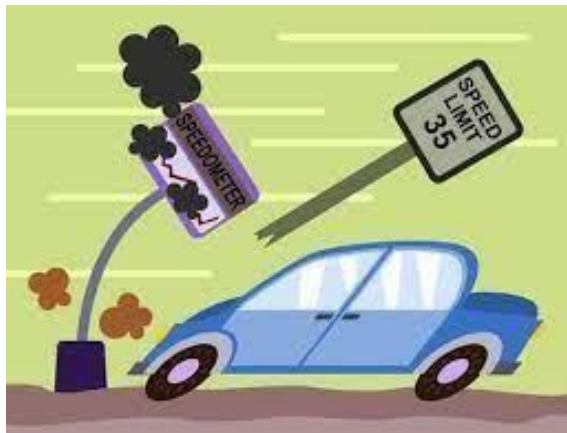
Figure 2.14: Over Speeding

2. Drunken Driving:

It's normal to drink alcohol to mark special occasions. However, when combined with driving, it turns a happy occasion into a bad one. Alcohol impairs mental clarity. Alcohol reduces fear and encourages people to take chances.

Figure 2.15: Drunken Driving

3. Distraction to Driver:

Even if a slight distraction while driving might results in serious accidents. Outside or inside the car, distractions are possible. Talking on a call phone while driving is currently the main sources of distraction.

1. Mirrors when driving, adjusting.
2. Radio or stereo in the car.
3. Animals crossing roads.
4. Billboards and banners

Figure 2.16: Distraction to Driver

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4. Red Light jumping:

At road crossings, it's typical to see cars driving through a red light without paying attention to it. Red light running is mostly done to save time. The widespread belief is that stooping at a red light wastes time and gasoline. According to studies, when traffic signals are deeded by all drivers, commuters arrives at their destinations promptly and safe. A person who runs a red light puts both his life and the safety of other drivers in danger.

Figure 2.17: Red Light jumping

5. Refusing to wear safety equipment like seatbelts and helmets.

Today, it is illegal to drive a four-wheel vehicle without a seatbelt, and two wheeler drivers are also required to wear helmets. After it was established through studies that these two precautions lesson the severity of harm during accidents, laws requiring the use of seat belts and helmets were passed.

Figure 2.18: Avoiding Safety Gears like seat belts and helmets

2.4 How do various road characteristics affect the likelihood of accidents?

Drivers: Excessive speeding, reckless driving, breaking the law, failing to read the signs, being tired, and drinking.

Pedestrian: Carelessness, illiteracy, moves on the highway while crossing at the inappropriate places and Jaywalkers.

Passengers: Putting their bodies outside of moving vehicles, engaging in conversation with drivers, getting on and off of moving vehicles on the wrong side while using footboards, etc.

Vehicles: Brake or steering failure, tire blowout, inadequate headlights, overloading, and projecting loads.

Road Conditions: Road degradation, eroding, is connecting rural roads with highways, detours, and unlawful speed bumps.

Weather conditions: Fog, snow, torrential rain, wind, and hailstorms.

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CHAPTER 3
STUDY AREA & DATA MINING

3.1.   Introduction

In this chapter, we'll talk about our study topic at various times throughout the course of several days. What topics are we researching, and why have we chosen those topics for our thesis? Then, over the course of several days, we present our study area repeatedly. Our examination of U.S. Route 5 Then we'll gather some data and add some data mining-related information. Information gathering, data mining, and data analysis are crucial concepts for this thesis.

3.2.   Study Area

We went with National Route N5. Bogra-Rangpur Highway N5 road is the research area. The Dhaka (Mirpur)-Utholi-Paturia-Natakhola-Kashinathpur-Bogra-Rangpur-Beldanga- Banglabandh Road is reported to be the site of 13% of all fatal accidents. We shall thus analyze various data in order to learn as much as we can about the causes of the N5 accidents.

We shall thus analyze various data in order to learn as much as we can about the causes of the N5 accidents.

Figure 3.1: Road accident in N5

N5 **National Highway N5**

The Dhaka-Banglabandha section of Bangladesh's N5, also known as the Dhaka-Banglabandh Highway the N5 is a national highway in Bangladesh that runs roughly 526.033 km from the nation's capital Dhaka and the border town of Banglabandha.

Area of the N5 road junction:

Table 3.1: N5 Road vehicle Accident Table

Dhaka Division	Dhaka, Nabinagar, Manikganj, Uthali,
Rajshahi Division	Kashinathpur, Shahjahanpur, Banani, Jahangirabad, Tinmatha, and Matidali
Rangpur Division	Modern Mor, Beldanga, Banglabandha, Saidpur,

Figure 3.2: Elenga-Hatikumrul-Rangpur 4-lane road

3.4. Data mining

The process of extracting implicit, undiscovered, and possibly beneficial information

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from data is known as data mining. Many engineering disciplines have recently conducted data mining investigations. This paper introduces the history of data mining and its techniques. We review further data mining solutions for issues in transportation engineering. Using a data mining technology that is available for purchase, the application of data mining for the usual example of "Vehicle Crash Study" is illustrated. The potential of data mining tool application in the field of transportation engineering is highlighted in the study. Data mining's definition typically depends on the basis and viewpoints of the definer. Data mining (DM) is a technique used to uncover patterns and connections in data, with a focus on huge observational data bases.

From the perspective of pattern recognition, data mining is the difficult process of finding true, fresh, possibly helpful, and eventually perceptible patterns in data, according to Fayyad.

Data mining, according to Zekulin, is the process of obtaining previously undiscovered, understandable, and usable information from sizable databases and using it to inform important business choices.

3.5 Transportation Engineering Data Analysis.

In order to ensure the safe, effective, swift, comfortable, convenient, affordable, and environmentally friendly movement of people and goods, transportation engineering, also known as transport engineering, applies technology and scientific principles to the planning, functional design, operation, and management of facilities for any mode of transportation. The study of traffic management, accident analysis, pavement conditions, roadway feature inventory, traffic signal and signal inventory, bridge maintenance, inventory of road characteristics, etc. generates a significant amount of data in the field of transportation engineering. The planning facets of transportation engineering entail political and technological forecasting choices, as well as features of urban planning. An urban transportation planning model is typically used in technical forecasting of passenger movement, Trip distribution (destination selection, where the traveler is going), trip creation (number of intentional trips), mode selection, and route assignment must all be estimated (the streets or routes that are being used). Other aspects of traveler decisions, such as auto ownership, trip chaining (the option to combine separate visits into a tour), and the decision of where to live or conduct business, can be included in more advanced forecasting (known as land use

Forecasting). Passenger trips are the focus of transportation engineering because they often represent the peak of demand on any transportation system.

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CHAPTER 4

DATA ANALYSIS

4.1Introduction:

We discuss data collecting and analysis in this chapter. All collect information and data N5 road in varies day and varies time in varies situation. And in this chapter we discuses all collecting data and Analysis.

4.2 Data Collection & Analysis:

1. First we visited the place and got a good idea about the condition of the road.

2. Next we observed the current condition of the road, how many lanes of the road, the condition of vehicles and the condition of human movement.

3. We have collected all accident data from various Accident research in several Institute. Example: Accident Research Institute (ARI) and (BUET). We collected various data form visited the N5 road area and some collect information by traffic Police in five years in 2011 to 2015.

4. For analysis, we gather data across a five-year period, from 2011 to 2015.

5. We collect some data and information Physically, We are collecting road accident information from our university elder brother and Classmate from time to time.

6. This data resolve by words file and sometimes help Ms Excel file. And we analyzethe road accident and we can solve the problem in many ways to N5.

7. In order to identify potential reasons and discover solutions to reduce trafficaccidents, designed and putting the analysis and information by chart and grapes.

8. Also follow the road condition and every situation in several times.

9. At last we finding the problem and solve the problem in many ways. And reducethe road accident.

4.3 Results of the Road Accident Analysis

4.3.1 Vehicle accidents and total annual accidents in N5 during thepast five years (2011 - 2015)

Firstly, a vehicle accident table in showing and input the value of past (2011-2015)by N5 road.

Table 4.1: N5 Road vehicle Accident Table

YEAR	1	2	3	4	5	Total
2011	47	96	0	0	0	143
2012	71	134	6	0	0	211
2013	29	104	3	0	0	136
2014	35	54	0	0	0	89
2015	48	130	3	0	0	181
Total	230	518	12	0	0	760
(Total Number of Vehicles on File= 12763)						
(Number satisfying the conditions= 760)						

Discuses the table:
Single vehicle Accident are represented by 1 Double vehicle Accident are represented by 2Triple vehicle Accident are represented by 3
Showing the table 4.1, past 5 years total yearly accident number and yearly accidentpercentage for N5 in figure 4.1.
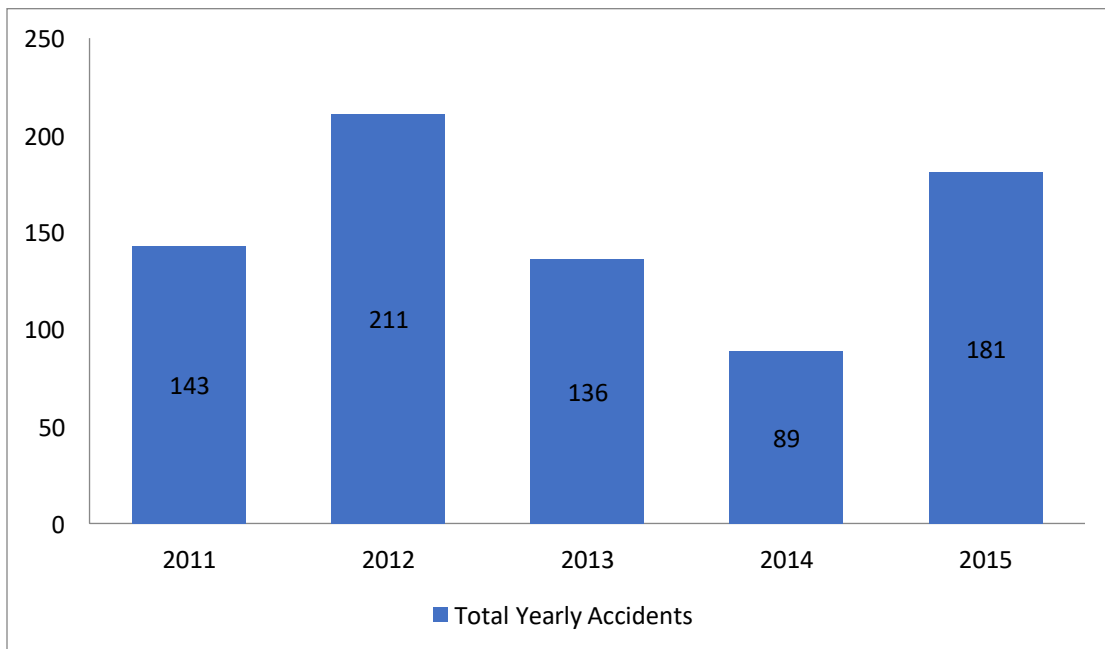
Figure 4.1 Total Yearly Accidents on N5 (2011-2015)

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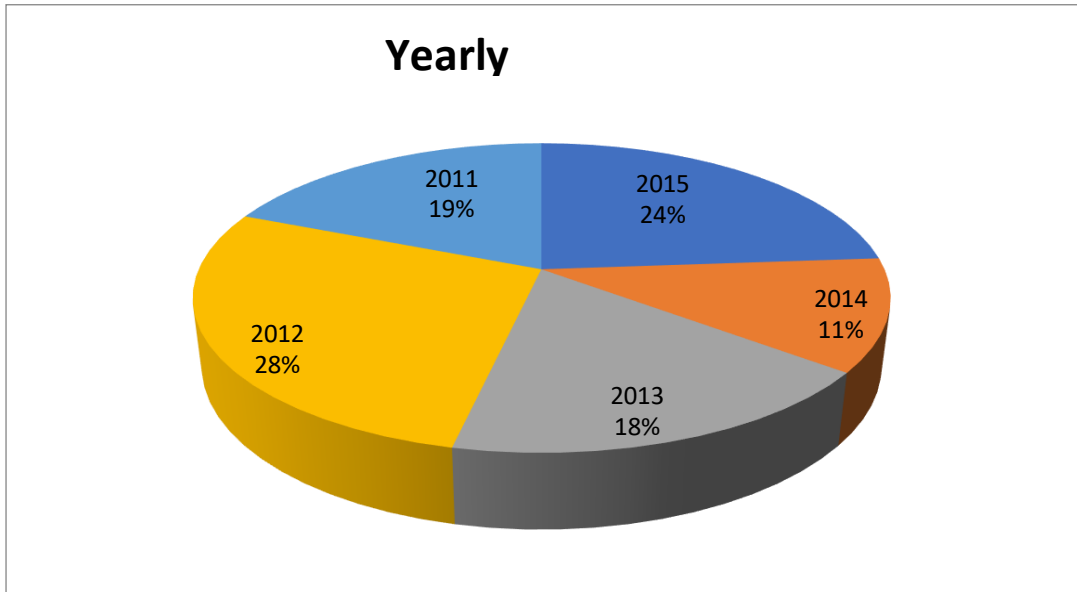
Figure 4.1 Total Yearly Accidents on N5 (2011-2015)

Here we see in figure 4.1 that,

- Lowest number of accident in 2014 and highest number of accident in 2012
- Accident increase in 2012 and 2015.

Vehicle Accident Chart of N5:

Before Chapter we putting the vehicle accident table 4.1 and this value are putting this vehicle accident chart. This chart is illustrating all data and this chart represents how much single, double, triple or more accident is happened on 2011 to 2015 in N5.
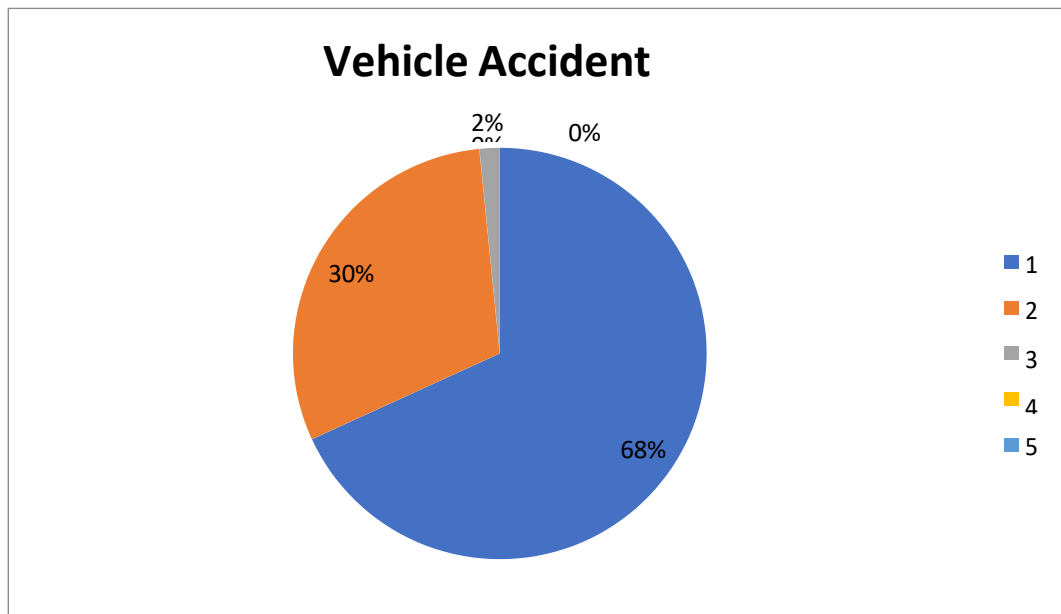
Figure 4.2 Vehicle Accident Charts of N5

Figure 4.2 we see

- Most of the accident is double and single vehicle accident in ourinvestigation in national highway N5.

4.3.2 Accident severity of N5 road for 5 year (2011-2015)

This table is discuses of accident severity of N5 road.

Table 4.2: Accident Severity of N5

YEAR	Fatal	Griev	Simple	Colln	Total
2011	72	17	5	1	95
2012	118	14	5	3	140
2013	72	5	2	3	82
2014	49	5	6	2	62
2015	87	21	4	2	114
Total	398	62	22	11	493
(Total Number of Vehicles on File= 9030)					
(Number satisfying the conditions= 493)					

Here we see the table,

Fatal Accident are represented in Fatal, Grievous Accident are

represented GrieveSimple Accident are represented Simple

Collision are represented Collin

These reflect the severity of injuries and the extent of car damage in anyaccident.
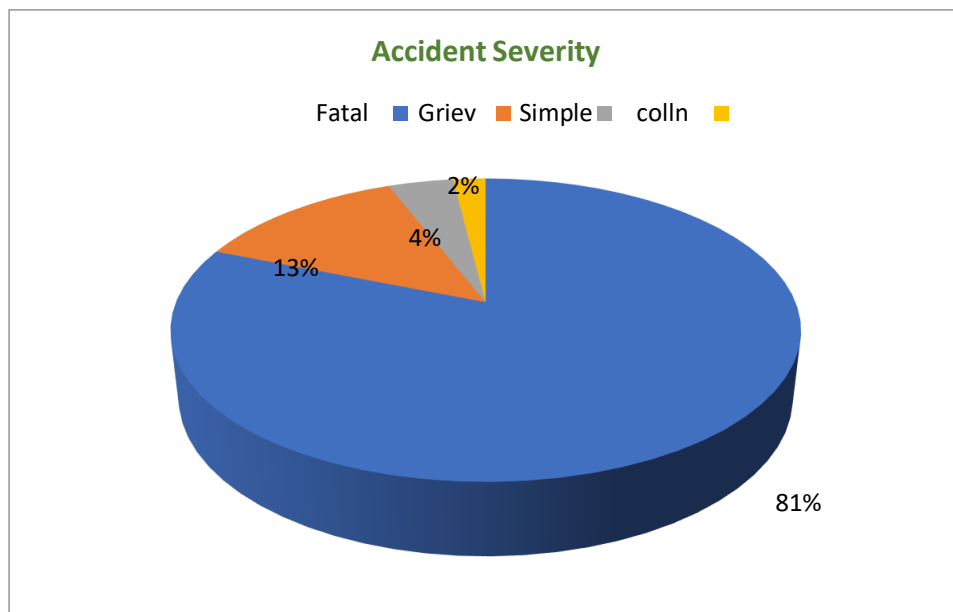
Figure 4.3: Accident Severity of N5 2011-2015

In table 4.2, all data of accident severity of N5 are putting pie chart on figure4.3.

Here we in figure 4.3 that,

- In N5 road, there is highest number of accident of fatal accident in this figure and table.
- This pie chart, fatal accident 81%, Grievous accident 13%, Simple accident 4% and collision are 2% occurred on 2011-2015.
- There is most accident in table 4.2 and pie chart 4.3 in 2012 and 2015 in fatal accidents.
- In the finding and recommendation portion, We will determine why there have been so many tragic accidents in recent years and how to address them.

4.3.3 Various type of accident in collision

Here we are putting data of national highway of N5 road which are showing the various type of N5 road accident in collision by (2011-2015).

Table 4.3 Various type of accident in collision in N5 (2011-2015)

YEAR	HeadO	RearE	90dey	Side	OverT	Obj1	Obj2	ParkU	Ped'n	Anim1	Other
2011	25	16	0	6	4	2	0	4	33	0	5
2012	45	20	0	4	11	1	1	5	49	0	4
2013	21	23	0	3	3	0	2	5	22	0	3
2014	14	6	0	7	6	0	0	1	25	1	2
2015	36	21	0	4	9	1	2	7	29	0	4
Total	141	86	0	24	33	4	5	22	158	1	18

Here we see the 4.3 table,

Head on are represented Head ORear end is represent RearE 90degree is represent

90deg Over turn are represent OverT Hit Object is represent obj1

Hit object (Off Road) is represent Obj2 Collision with parked car is represent Park U

Hit Pedestrian is represent Ped'n

Hit Animal is represent animal

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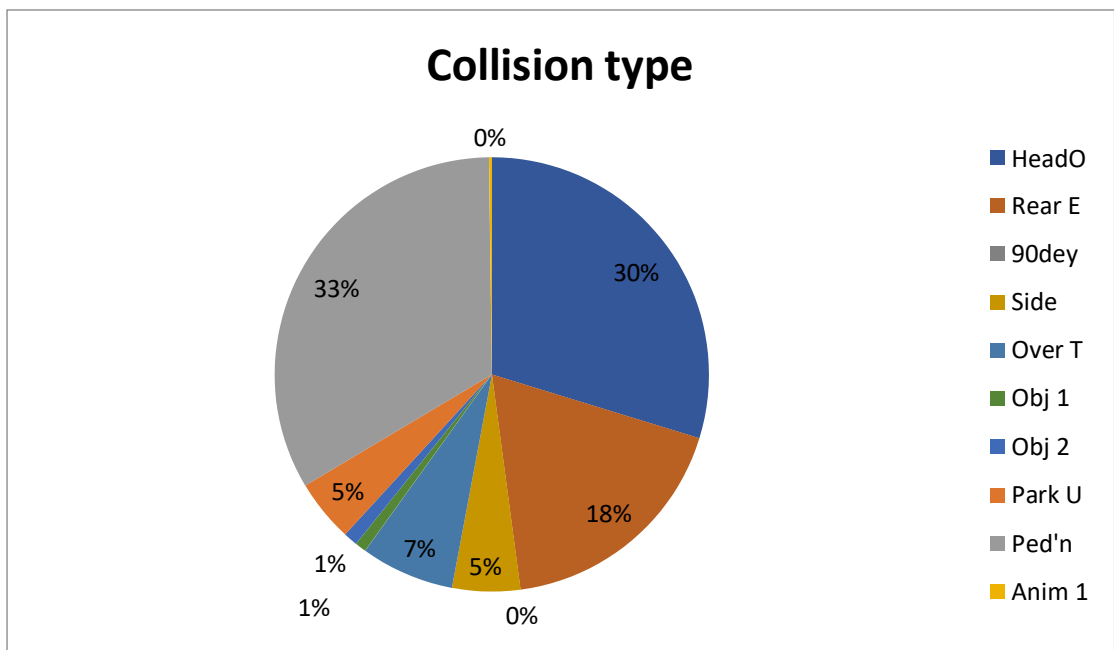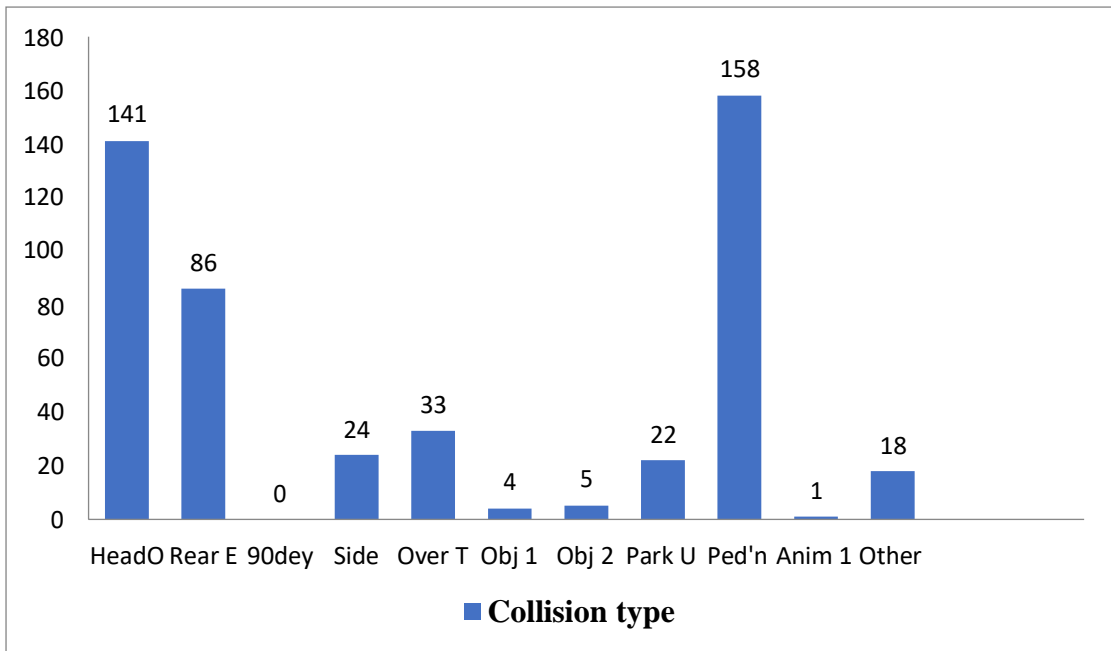
Figure 4.4 Accident for various types of collision in N5

This figure 4.4 we are putting data pie chart the various type collision in N5 road accident by (2011-2015). Various collisions are presented by percentage of pie chart.

- In N5 road, highest number of accident of pedestrian with car is the mostly occurred collision; about 33% accidents of hit pedestrian and 30% head on accidents in 2011-2015.
- In this pie chart showing minimum accident 90 degree and hit animal.

4.3.4 Accident for various Weather Condition of N5 (2011-2015)

Here we have added a data table of the accident for the weather at
N5 on the nationalhighway (2011-2015)

Table 4.4 Accident for various weather Condition in N5 (2011-2015).

Weather	Fatal	Griev	Simple	Colln	Total
Fair	371	57	19	11	458
Rain	9	2	0	0	11
Wind	0	0	0	0	0
Fog	18	3	3	0	24
Total	398	62	22	11	493
(Total Number of Vehicles on File= 9030)					
(Numer satisfying the conditions= 493)					
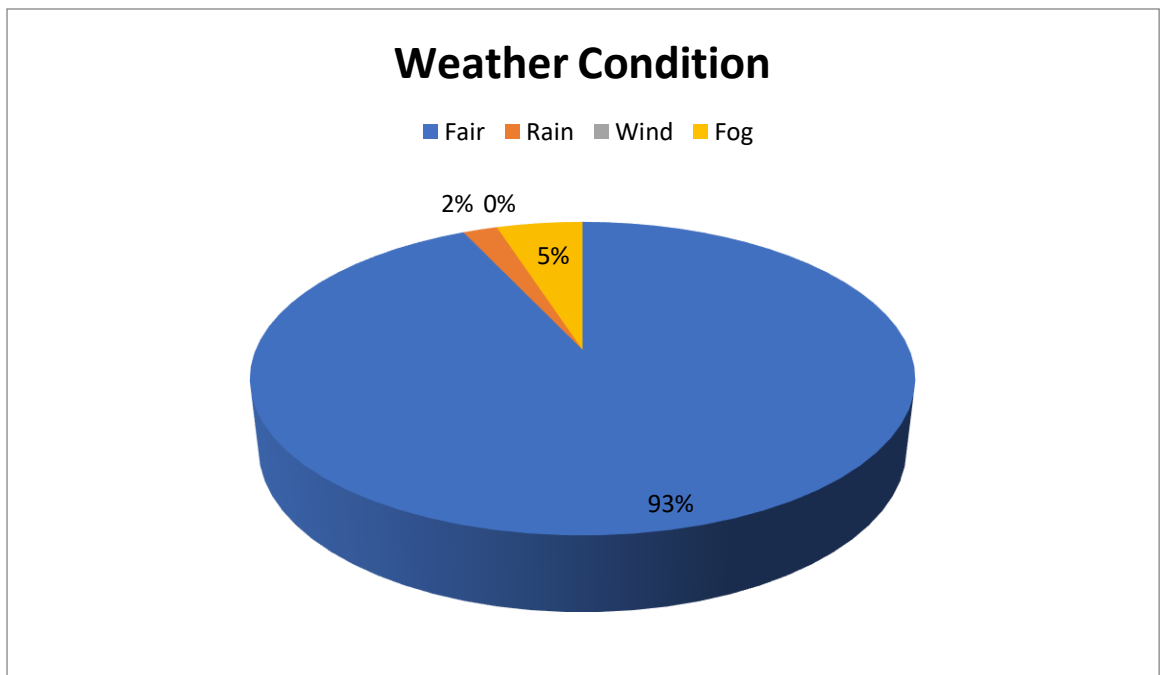
Figure 4.5: Accident for various weather Condition of N5

In this Pie Chart 4.5,

• This figure we see the maximum accident of fair weather condition. There is 93%
accident in fair weather condition.

• Minimum accident is occurred in other weather. There is 7% accident in various
weather conditions.

4.3.5 Accident on several Surface Condition in N5 (2011-2015)

Here we are putting data of national highway of N5 road which are showing the various surface conditions in N5 road (2011-2015).

Table 4.5: Accident on several surface condition in N5

Sperf-Cond	Fatal	Griev	Simple	Colln	Total
Dry	383	60	20	11	474
Wet	11	2	2	0	15
Muddy	0	0	0	0	0
Flood	0	0	0	0	0
Other	4	0	0	0	4
Total	398	62	22	11	493
(Total Number of Vehicles on File= 9030)					
(Number satisfying the conditions= 493)					

In this table 4.5,

Dry surface are represented dryWet surface are represented wet

Muddy surface are represented muddyFlooded surface are represented flood

From table 4.5, this data are putting pie chart
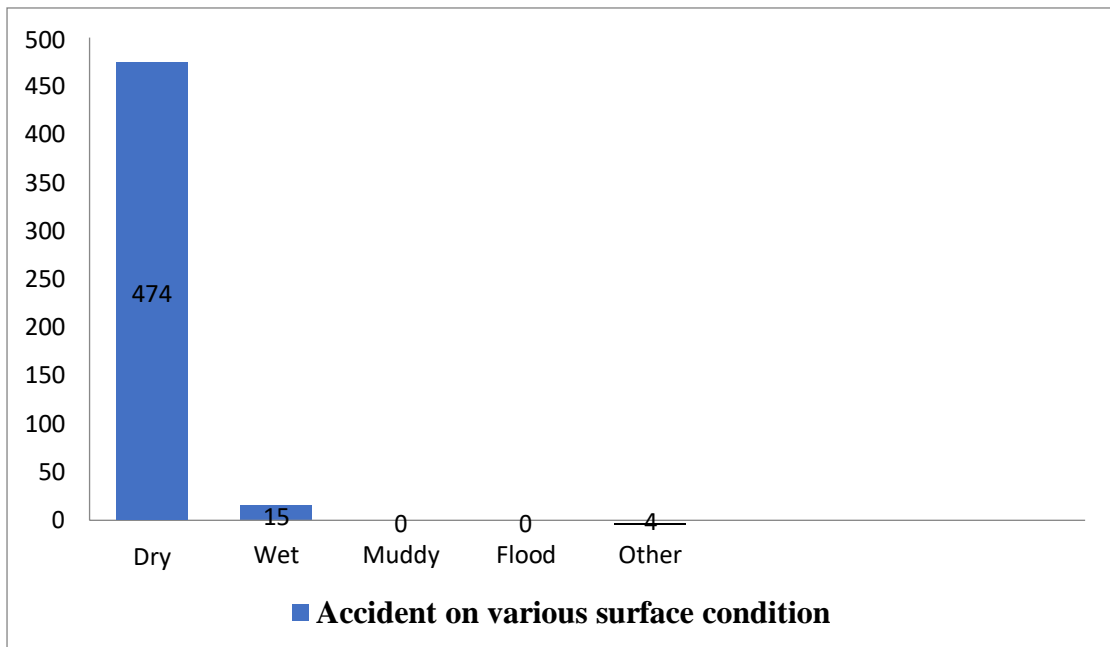
Figure 4.6: Accident on various surface condition in N5

From figure 4.6 we see that,

- On the national route N5, accidents have happened more frequently when the road surface is dry.

- The majority of incidents in this area are caused by people driving more quickly on dry roads.

- Slippery, wet roads are another major accident contributor.

4.3.6 Passenger Casualties in N5 (2011-2015).

Table 4.6: Passenger Casualties in N5

Passng Casual	2011	2012	2013	2014	2015	Total
0						0
1	32	38	31	8	42	151
2	23	37	19	14	35	128
3	17	21	13	16	11	78
4	13	30	27	10	17	97
5	5	27	0	0	18	50
6	13	6	15	0	19	53
7	0	0	0	0	15	15
8	9	0	11	0	0	20
9	0	0	0	0	0	0
10	0	0	0	12	21	33
11	0	0	0	0	0	0
12	0	13	0	13	0	26
13	0	0	0	0	0	0
Total	112	172	116	73	178	651

In this table 4.6,

Casualties is 0, Single Casualties is 1, Double Casualties is 2, Triple Casualties is 3 and more Casualties is 4 and 4+

Form Table 4.7, we looked at two separate things a chat wit no casualties and a chat with casualties.

To compare and assess severity, we first display our pie chart with zero casualties and without zero casualties for N5.
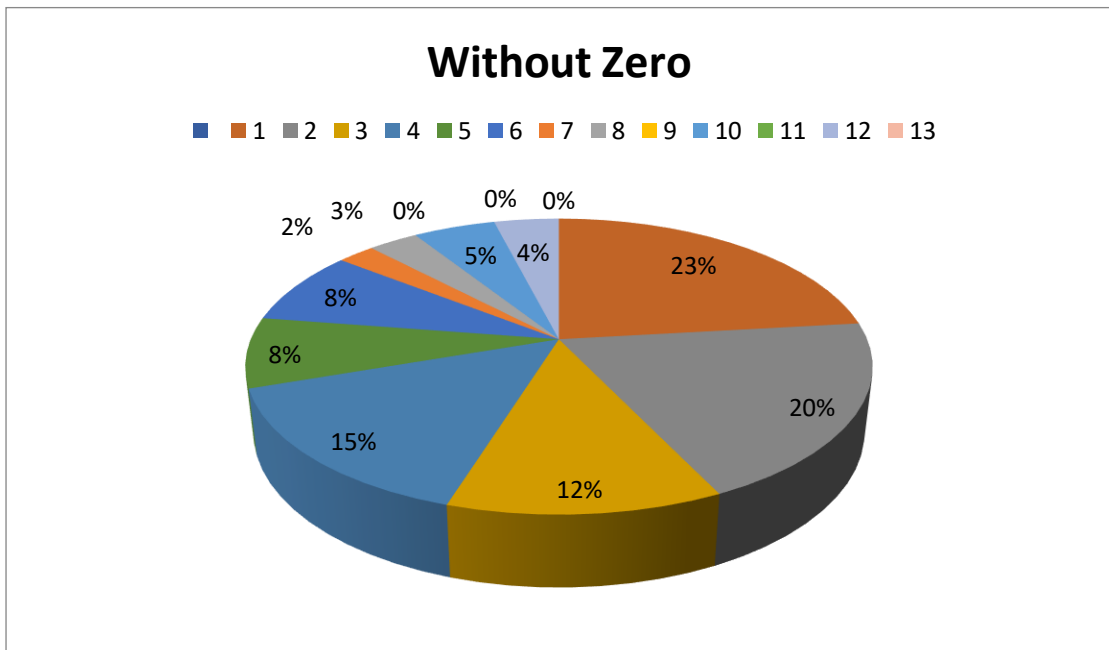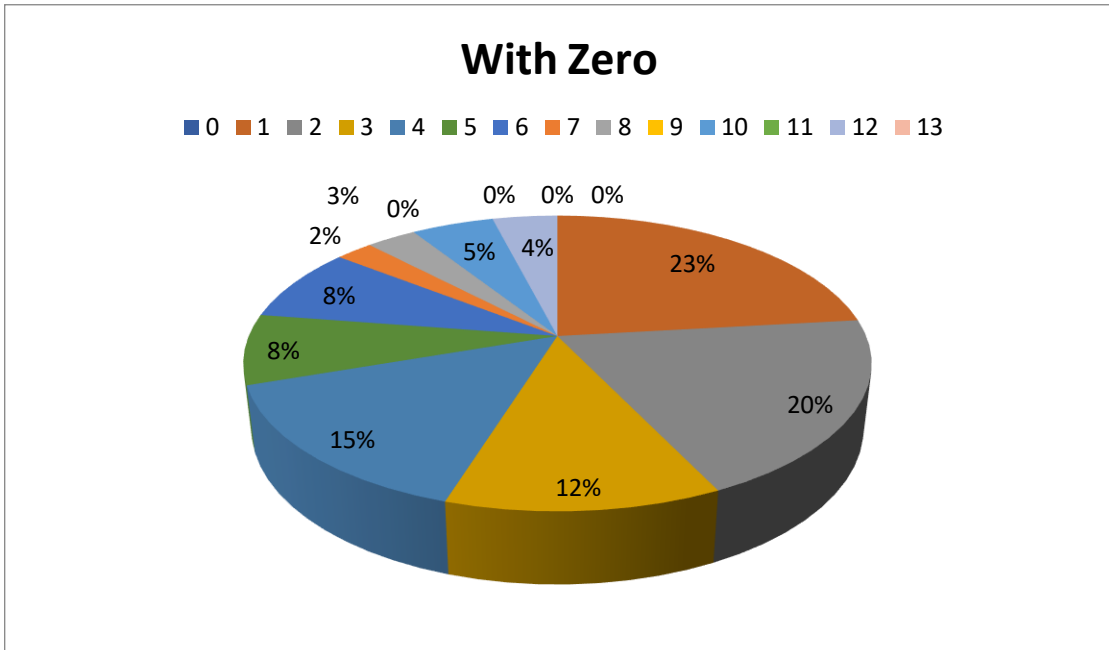
Figure 4.7: % of passenger casualties with zerocasualties &

Without zero causalities of N5.

We can say 4.7 figures,

- Total zero casualties about 31% accidents.
- There are 23% single casualties, 20% are double casualties, 12% are triple casualties and 15% are 4 and 4+ casualties in past 5 years.

We are included the several between data with zero casualties' and without zero casualties accident by accident severity of the past 5 years in various time(2011-2015)

With Zero Casualtie

Year	Value
2011	177
2012	257
2013	155
2014	119
2015	240

Without Zero Casualtie

Year	Value
2011	112
2012	172
2013	116
2014	73
2015	178
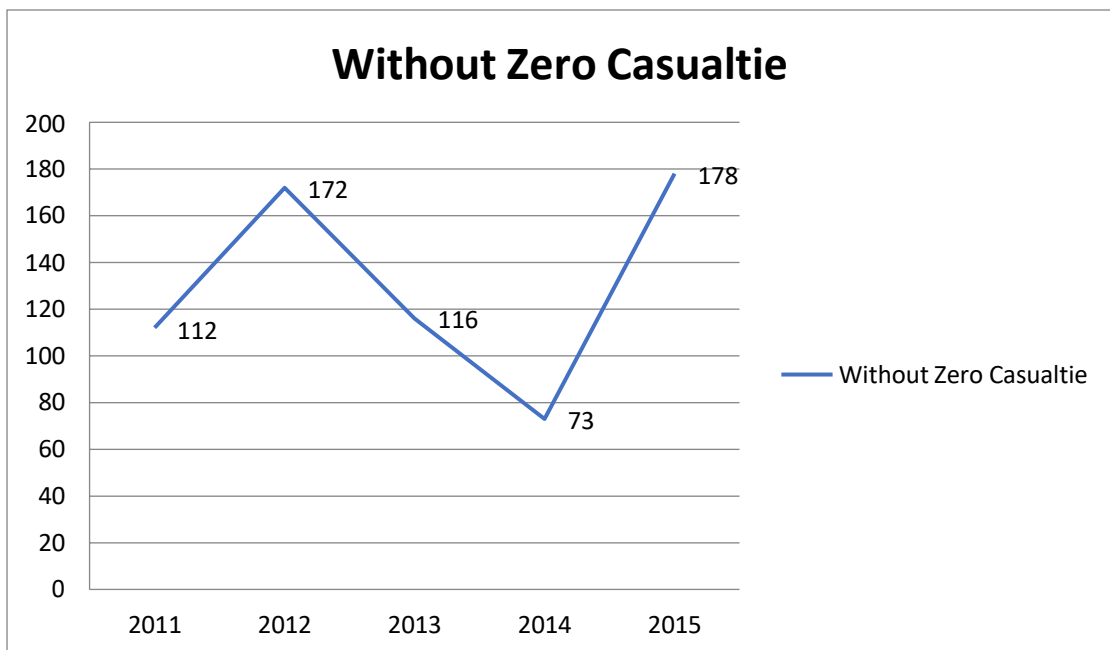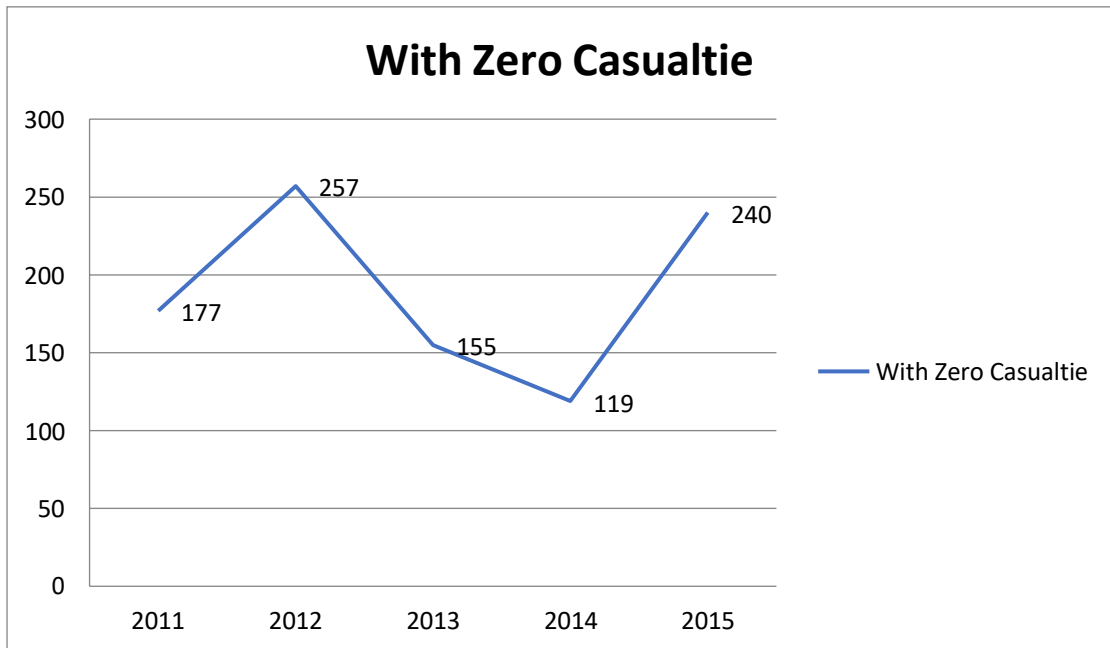
Figure 4.8: Passenger casualties with zero and without zero casualties of N5

From figure 4.8 we can say,

- There are some obvious distinctions between a total accident and an accident with victims.
- 2015 accident are increase but casualties are decreased.

4.3.7 Accident of Area wish N5 (2011-2015)

Again, we draw a table and putting the accident of area wish N5 (2011-2015) data andinformation. These accidents are area wish example: Urban and rural area.

Table 4.7: Accident of Area wishes N5

Loc' H Type	Fatal	Griev	Simple	Colln	Total
Urban	80	13	5	4	102
Rural	307	47	17	7	378
Total	387	60	22	11	480
(Total Number of accidents on File= 9030)					
(Numer satisfying the conditions= 493)					
(Number of Unknown =13)					
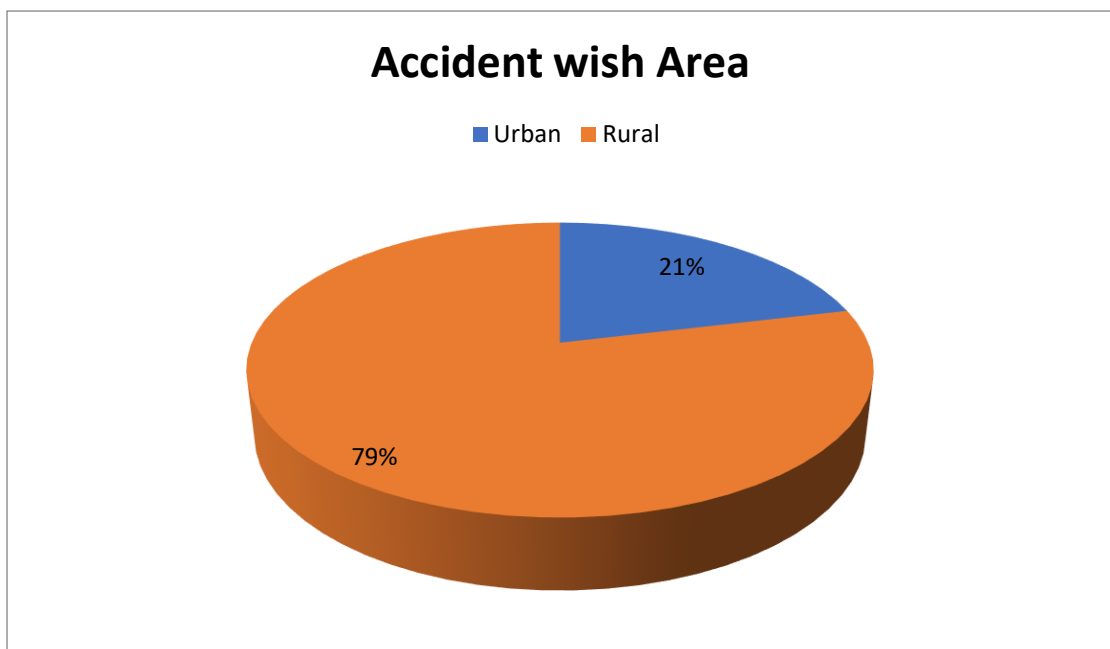
Figure 4.9: Accident of Area wish of N5

We see that table 4.7 and figure 4.9,

- We see the table and figure there are most accident in rural area and minimumaccident are urban area.
- 79% accident is occurred rural area and 21% minimum accident urban area.

4.3.8 Accident for various type of road feature in N5 (2011- 2015).

Table 4.8: Accident for various types of road feature (2011- 2015).

Road Featur	Fatal	Griev	Simple	Colln	Total
None	376	58	22	10	466
Bridg	10	1	0	0	11
Culvt	1	0	0	1	2
Narrw	1	0	0	0	1
Spd BK	4	1	0	0	5
Total	392	60	22	11	485
(Total Number of accidents on File= 9030)					
(Numer satisfying the conditions= 493)					
(Number of Unknown =8)					
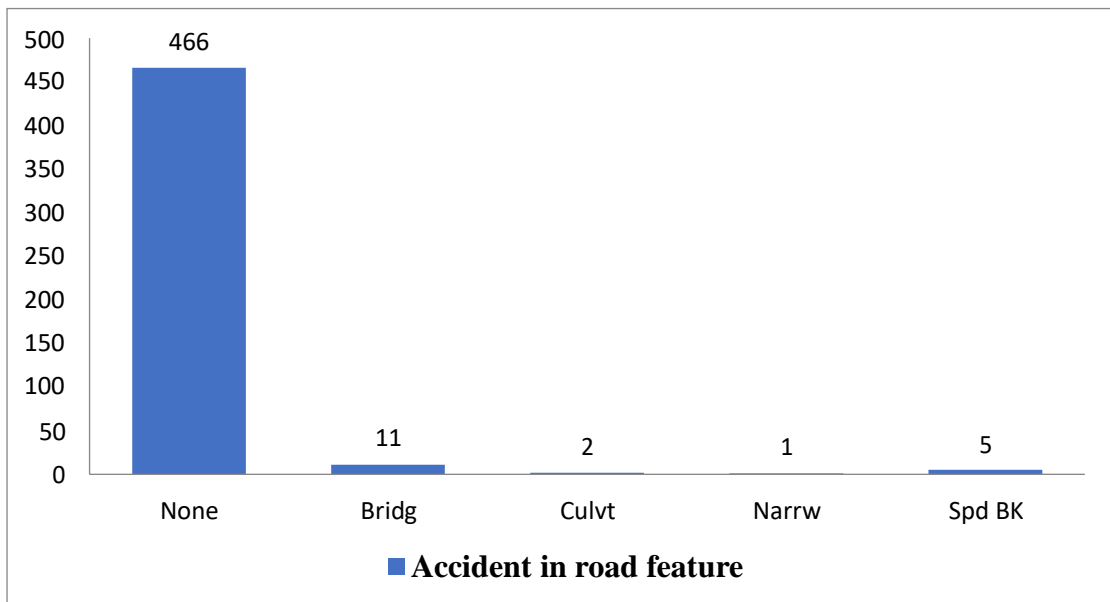
Figure 4.10: accident for various types of road feature (2011- 2015).

We are included a national highways of N5 data table that displays accident involving numerous sots of road features 2011 to 2015.

From figure 4.10 we see that,

- In national highway N5, the most number of accident are occurred on none road feature.
- People drive faster in none road feature and that is the cause of most accidents here.
- Bridge is also cause of much accident.

4.3.9 Accident for different type of road factor in N5 (2011-2015).

Now, here we have added a data table of National highway of N5 which represents the accident for different types of N5.

Table 4.9: Accident for different type of road factor in N5.

Factor	Fatal	Griev	Simple	Colln	Total
Speed	120	16	5	2	143
Car	152	28	15	6	201
Sleep	0	0	0	1	1
Close	2	1	0	0	3
Signal L	2	2	0	0	4
Over T	13	5	0	1	19
Turng	1	0	0	0	1
Alcoh	1	0	0	0	1
Ped'n	81	5	0	0	86
Passg	4	0	0	0	4
Road C	0	0	1	0	1
Road F	2	2	0	1	5
Weath	2	0	0	0	2
Veh' D	3	2	0	0	5
Load	1	0	0	0	1
Tyre B	2	0	1	0	3
Animl	1	0	0	0	1
Other	0	0	0	0	0
Total	387	61	22	11	481
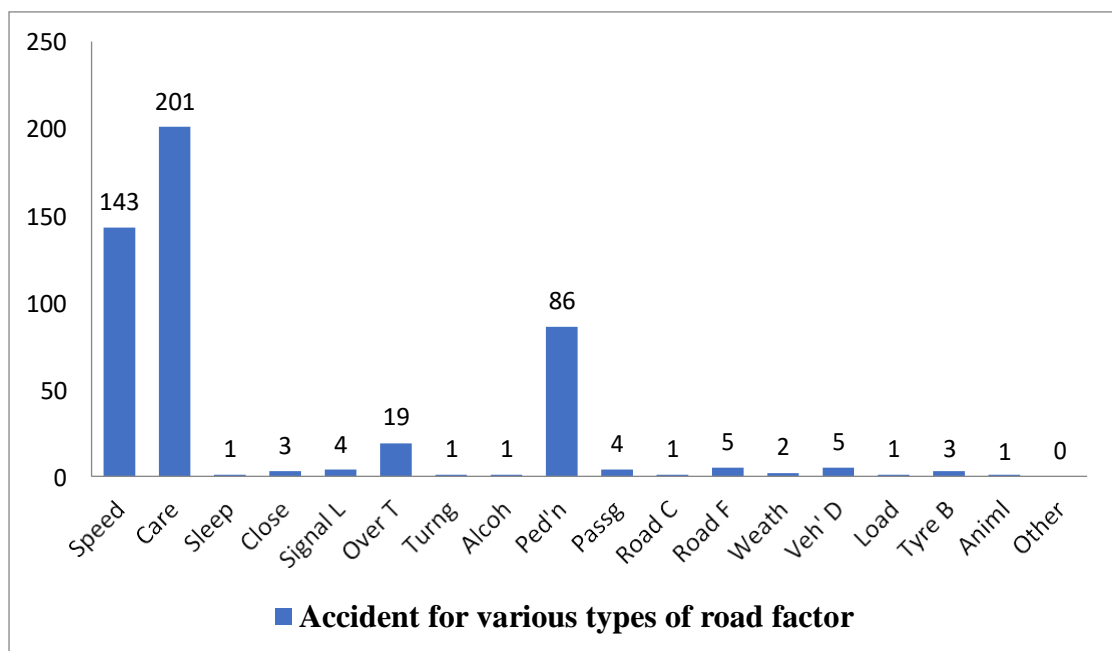
Figure 4.11: accident for different types of road factor (2011-2015).

From figure 4.11 we see that,

- In national highway N5, there are maximum accident are occurred car and minimum accident are occurred other.
- Speed, overtaking, and pad's are also higher number of accident.

4.3.10 Date Wise Accident of N5 (2011-2015).

We are input the date wish accident in this table. This are started data 1 and last date 31. There is different accident in different days. And analyses the all data date wise accident on N5 (2011-2015)

Table 4.10: Date Wise Accident of N5

DATE	Fatal	Griev	Simple	Colln	Total
1	16	2	0	0	18
2	14	3	3	0	20
3	9	1	1	0	11
4	10	4	1	1	16
5	16	3	1	0	20
6	7	2	0	0	9
7	9	6	1	0	16
8	13	4	1	1	19
9	12	3	1	0	16
10	13	1	1	0	15
11	9	2	2	0	13
12	14	0	2	0	16
13	12	2	0	1	15
14	16	1	0	0	17
15	21	2	1	1	25
16	8	2	1	0	11
17	21	3	0	1	25
18	13	1	0	0	14
19	11	1	1	0	13
20	15	2	0	0	17
21	17	3	1	1	22
22	11	0	0	0	11
23	16	1	0	2	19
24	19	2	0	1	22
25	13	0	0	0	13
26	7	1	0	0	8
27	17	1	1	1	20
28	11	1	1	0	13
29	10	2	1	1	14
30	13	4	1	0	18
31	5	2	0	0	7
Total	398	62	22	11	493

Here table 4.12; the date wish data are putting the pie chart,
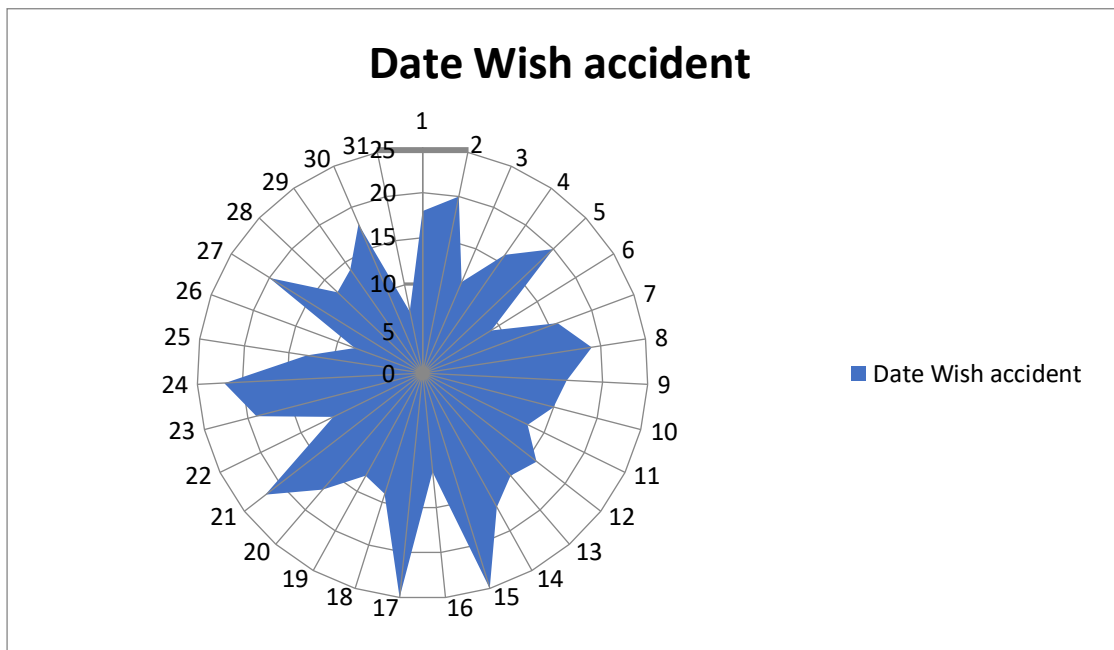
Figure 4.12: Date Wish accident (2011-2015).

From Figure 4.12 we see,

- Form Figure we see maximum accident date 15th and 17th.
- Minimum accident is occurred 31th date. And several accidents are severaldays.

4.4 SOME PRIORITY FOR ROAD SAFETY

Road safety methods and tenets:

There are numerous and diverse methods for decreasing and preventing accidents. It is important to understand that failures in the interactions between people, vehicles, and the road environment the components that create the road traffic system are what cause road accidents. Because of the interaction of these several factors that results in a traffic accident, road safety must be addressed from a variety of angles. To decrease traffic accidents, the resulting injuries, and the resulting financial losses, an integrated, multidisciplinary approach is necessary.

The basic idea behind making roads safer is to implement numerous actions by concentrating on five broad tactics. These are:

✓ Exposure controls prohibit access to dangerous conditions and limit some types of travel.

✓ Accident prevention- the design, building, and maintenance of cars and the road system, as well as the use of traffic control and management tools, among other things, have a significant impact on the frequency of traffic accidents.

✓ Behavior management includes educating road users about the law and how it is applied.

✓ Injury control strategies include managing roadside hazards and vehicle design.

✓ Post- injury management includes procedures for recovery, treatment and rehabilitation.

However, it should be highlighted that the leadership of and regular referencing to the core principles of operational features of safer road designs could help to maximize the benefits of the road safety strategies and measures, importantly, the fundamental tenets of a safer transportation environment are :

✓ Provide drivers with direction through unique areas, advise them of the conditions they will face, and alert them to any unusual or subpar features.

✓ Direct the driver as they move through areas or conflicting portions.

✓ Pardon the driver's incorrect for importer conduct.

✓ Control the driver's movement through any areas or spots of contention.

✓ Forgive the driver's incorrect or improper actions.

Additionally, the following might essentially be included in some components of a systematic approach for increasing road safety nationally.

✓ Having an emphasis on objective data relating to accidents, casualties, and the environment, comprehensive, systematic accident data collection, recording, and computerized database building.

✓ Understanding and systematic use of engineering countermeasures that have been successfully tested, together with accurate evaluation studies of their impacts.

Engineering for road safety:

The term "road safety engineering" can be used to describe a procedure that uses engineering principles to find changes to road design and traffic management that will cost-effectively lower the number of accidents on the roads. There are four stages where potential for road safety engineering often apply.

✓ Road network planning that is focused on safety.

✓ Designing new highways with safety elements in mind.

✓ To prevent future issues, existing roadways' safety features need to be improved.

✓ The network of roads known hazardous places will be improved.

Use of a road safety audit:

A relatively recent and very cost-effective strategy for accident preventions is the road safety audit. Both new projects and existing roadways can use it. The audit procedure is carried out by independent auditors, while is a crucial component. At specific points during the development of the roads, safety adults are conducted. The use of safety audit principle in Bangladesh has a great deal of promise to quickly improve the deteriorating safety situations and might greatly improve long-term safety at minimal expanse.

Local traffic Safety:

Through the persistent implementation of safe community initiatives at the local levels, expanding public participation and raising awareness, as well as implementing the necessary adjustments in behavior and surroundings, there are significant opportunities and scope for building a safer road environment. Due to its knowledge, resources and network, the community can significantly improve current programs and even come up with original solutions to safety issues.

Increased enforcement and safety awareness initiatives:

To address the issues of traffic accidents, it is critical to step up enforcement and instructional efforts. Bangladesh currently has very poor levels of traffic law enforcement, vehicle rules, and road user education. It is widely acknowledged that educating the public and raising awareness of ways to avoid traffic accidents is the most effective strategy to lower the risks of accidents. Governmental and non-governmental organizations should produce educational films on defensive driving, safe driving, etc. In depth study of human aspects in accidents could greatly advance knowledge of the involved road users' behavior.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

Premature deaths and disability are frequently brought on by traffic accidents. Each year, about 1 million people die on the world's highways. Bangladesh's position is rapidly getting worse.

Road safety issues are becoming more and more prevalent, partly as a direct result of population increase that is occurring quickly, motorization, and urbanization.

By international standards, the safety concern is exceedingly serious. Particularly recently, the number of fatalities has been rising quickly. A compelling argument may be made for minimizing national economic loss in addition to the humanitarian impact of lowering road deaths and injuries, which use up significant financial resources. There is a clear need for significant effort and investment in safety measures to buck the trends if the situation regarding road safety is to be improved.

The goal of this paper is to raise awareness of the seriousness of the problem of traffic accidents, and it discusses new issues and strategies related to road safety, paying particular attention to some recent initiatives in Bangladesh that are significant in the context of regional and sub-regional assistance and support.

5.2 Analyze Data Finding

From different types of accident data of National Highway N5 (2011 to 2015), we analyzed the data separately. Now we are added our Analyzing data or key finding note below,

- ✓ Lowest accident rate in N5 in 2014. Road Expansion Project was ongoing at the time. Therefore, drivers should refrain from driving more quickly than usual because it will help to reduce accidents.

- ✓ Road dividers (Median) help reduce traffic collisions.

- ✓ Most accidents occur in rural areas along the N5 highway.

- ✓ Nearly 79% accidents are happened rural area.

- ✓ Nearly 81% of accidents are fatal, 13% are tragic, 4% are simple, and 2% are collisions on the N5 Highway. Several terrible accidents have a negative effecton our country's GDP.

✓ The majority of accidents occurred on the N5 highway, which was now under traffic management. If you simply take into account traffic control zones,

Pedestrian crossings, divider/barriers (median), and police-controlled trafficsections are all riskier.

✓ Road accidents were significantly impacted by external, rear-end, lower-limb, head and neck, and face collisions.

✓ The majority of accidents did occur in good weather. Numerous accidents were caused by rain and fog.

✓ Traffic case we've seen that in traffic accidents, pedestrians are most at harm.

✓ On a dry road, drivers move along more quickly. The majority of accidents on both roadways occurred when the roads were dry. Additionally, a wet road hassome effect.

✓ There are disparities in the number of accidents and accidents with fatalities. Although there are more accidents some years than others, there are fewer casualties.

✓ The majority of vehicle accidents on both highways happened without any apparent vehicle problems. Numerous accidents happen as a result of braking, light, and multiple flaws.

✓ The 15th and 17th of the month we saw more incidents than previous dates in N5. The highways are still rather crowded on this date.

The main factors leading to traffic accidents on both highways include an increase in vehicles, worsening road conditions, increased speed, an increased tendency to brake in traffic, a decrease in education, poor traffic controls, an increase in vehicles that aren't fit for the road, an increase in highway "black spots," a dearth of traffic lights, etc.

5.3 RECOMMENDATIONS

Here is a summary of the suggestions made in perspective of the survey's results.

1. Create and develop lead organizations, and use target-setting to oversee performance. Each member nation should set up a main road safety agency that is sponsored by the government. This organization's status should be intermenstrual, and its national budget should have a clearly specified budget for it. This organization should take the initiative in data gathering and host meetings with all stakeholder institutions at least once a year to discuss issues with national road safety in light of international guidelines and national priorities. With the assistance of well-known political and governmental personalities, it should make public measurable road safety targets for the next five years in order to demonstrate political commitment to meeting these standards

2. Design transportation around walking, cycling, and public transportation; choose

safe, healthy, and environmentally sustainable modes of transportation. In contrast to other regions, the Region has zero policies to support safe walking, bicycling, and public transportation. The member nations should include this into all future transportation initiatives.

3. Implement the top five measures in order to lower the risk of injury during a crash.

a. Control Speed: The countries of the Region should define each type of route before setting speed restrictions on urban, rural, and interstate roads and highways. Fixed and portable speed cameras should be used to enforce speed limits. Engineering interventions should also be assessed in the Region so that other members can profit from their testing in comparable environments.

b. Implement Seatbelt Laws: All passengers in a car should be required to wear seatbelts, and these regulations should be more strictly enforced.

c. The inclusion of kid safety seats in vehicles: Most of the nations in the region still lack child restraint legislation. Additionally, in nations where these rules are already inplace, enforcement needs to be strengthened.

d. Make Regular Motorcycle Helmet Wear Mandatory: Pillion riders should be included to motorcycle helmet laws, and there needs to be a regional standard established for these helmets. The region's countries need to make more of an effort to measure helmet usage rates.

e. Identify the role that alcohol plays in car accidents and take action to control it if necessary. The Region's nations should use standardized equipment to measure drunk driving. Furthermore, it's possible that people take other illegal drugs or substances before or while they're driving. All of these compounds should be covered by laws, and local traffic enforcement should have access to measurement equipment.

4. Roads should only be used by secure cars. To make sure that only automobiles that adhere to international safety standards, such as those of the European Union, are allowed to be on the market, the production and import standards for vehicles should be assessed in the Region. In the Region, safety measures should not be considered "optional," but rather as mandatory components of a vehicle.

5. At every level of road construction and maintenance, safety audits are used to ensure safe road design. To adopt preventive measures on the roads within their jurisdiction, national, regional, and local road authorities should undertake road safety audits.

6. Enhance trauma care. A comprehensive trauma system has many different parts, but a crucial one is a pre-hospital care network of ambulances connected via a universal access number. The effectiveness of emergency and trauma care in the Region has to be investigated, and benchmarks for results need to be established.

7. Define the data requirements; unify the terminology and data collection techniques. To support the need for road safety targets, costing studies should be carried out using standardized procedures in all member nations.

8. Increase the institutional ability to collect, analyze, and disseminate data. The Region must synchronize definitions, data gathering techniques, and data demands. For the purpose of installing surveillance systems, cooperative partnerships between the health, police, and traffic authorities must be created. The region's nations must support institutional growth in injury prevention. Government oversight of various institutions engaged in injury research and prevention can help with this.

5.4   CONCLUDING REMARKS

According to the global estimate, emerging nations like Bangladesh will see an alarming rise in traffic fatalities over the next five years. As a result, solving the safety issues becomes extremely difficult in the absence of the necessary transportation safety personnel and resources. The scope and peculiarities of the issue with road safety in N5 have been emphasized in this research. It covered the top concerns and solutions for enhancing safety. A number of recent government measures, including the creation of an Accident Research Center, have been made to organize and carry out road safety programs through a strategic action plan. In terms of government commitments, these initiatives to address the safety issue are regarded as being very significant. They also play a significant role in regional and sub-regional collaboration and support in the sharing of information, developments, and best practices to combine programs for safety improvements.

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Appendix - A

Form No. 34
Bengal Form No. 403Q

১. দুর্ঘটনার ক্রমিক নম্বর	**গণপ্রজাতন্ত্রী বাংলাদেশ সরকার** **বাংলাদেশ পুলিশ** সড়ক দুর্ঘটনার রিপোর্ট ফরম Regulation 254 (b)		**৩. থানা**
২. প্রাথমিক তথ্য বিবরণী নম্বর			**৪. জিলা / মেট্রো পুলিশ**
৫. দুর্ঘটনা কবলিত গাড়ীর সংখ্যা ☐☐	**৯. দুর্ঘটনার মাত্রা** F. মৃত্যু ঘটিত দুর্ঘটনা G. মারাত্মক ক্ষত জনিত দুর্ঘটনা S. সাধারন ক্ষত জনিত দুর্ঘটনা M. মটর সংঘর্ষ		দুর্ঘটনার **১১. তারিখ ১২.মাস ১৩.বছর** তারিখ --------- / ---------- / -----------
৬. হতাহত ড্রাইভারের সংখ্যা ☐☐			**১৪. দুর্ঘটনার সময়**
৭. হতাহত যাত্রীর সংখ্যা ☐☐			রিপোর্ট করার তারিখ
৮. হতাহত পথচারীর সংখ্যা ☐☐	**১০. দিন** [সোম, মঙ্গল, বুধ, বৃহস্পতি, শুক্র, শনি, রবি] ১ ২ ৩ ৪ ৫ ৬ ৭		রিপোর্ট করার সময়

১৫. সংযোগ স্থলের ধরন	**১৬. ট্রাফিক নিয়ন্ত্রণ ব্যবস্থা**	**১৭. সংঘর্ষের ধরন**	**১৮. গাড়ী চলাচলের দিক**
১. সংযোগ স্থল নয় ৫. ⟲	১. অনিয়ন্ত্রিত ২. রোড ডিভাইডার দ্বারা নিয়ন্ত্রিত ৩. পথচারী পারাপার ৪. পুলিশ নিয়ন্ত্রিত ৫. ট্রাফিক বাতি নিয়ন্ত্রিত ৬. পুলিশ ও ট্রাফিক বাতি নিয়ন্ত্রিত ৭. থামা / যেতে দিন সংকেত দ্বারা নিয়ন্ত্রিত ৮. অন্যান্য -------	১. মুখোমুখি ৬. রাস্তার উপরস্থ বস্তুকে আঘাত ২. পশ্চাত ভাগ ৭. রাস্তার ধারের বস্তুকে আঘাত ৩. সমকোণ ৮. দাঁড়ানো গাড়ীকে আঘাত ৪. পার্শ্ব ঘর্ষণ ৯. পথচারীকে আঘাত ৫. উল্টে যাওয়া ১০. জন্তুকে আঘাত ১১. অন্যান্য ----(যেমন গাড়ীর ছাদ থেকে পড়ে যাওয়া)	১. এক মুখী চলাচল ২. উভয়মুখী চলাচল **১৯. রোড ডিভাইডার** ১. আছে ২. নাই
২. ✚ ৬. রেলওয়ে ক্রসিং			
৩. ⊤ ৭. অন্যান্য ---------			
৪. ⊥			

২০. আবহাওয়া	**২১. আলো**	**২২. রাস্তার জ্যামিতিক বিবরণ**	**২৩. রাস্তার উপরিভাগের অবস্থা**	**২৪. রাস্তার থকারভেল**	**২৫. রাস্তার প্রকৃতি**	**২৬. রাস্তার শ্রেণী**
১. ভাল ২. বৃষ্টি ৩. ঝড় ৪. কুয়াশা	১. দিন ২. ভোর / সন্ধ্যা ৩. আলোকিত সড়ক (রাত) ৪. আলোকিত সড়ক (রাত)	১. সোজা - সমতল ২. বাঁকানো ৩. অসমতল ৪. বাঁকা- অসমতল ৫. চূড়া	১. শুকনা ২. ভেজা ৩. কর্দমাক্ত ৪. জলাময়/প্লাবিত ৫. অন্যান্য	১. পাকা ২. ইটের রাস্তা ৩. কাঁচা	১. ভাল ২. এবড়ো থেবড়ো (রাফ) ৩. মেরামত কাজ চলছে	১. ন্যাশনাল ২. রিজিওনাল ৩. ফিডার রোড ৪. রুরাল রোড ৫. সিটি রোড

২৭. রাস্তার বৈশিষ্ট্য	**২৮. এলাকার ধরন**	অফিসে ব্যবহারের জন্য	**29. XY MAP** ☐☐	**32. ROUTE** ☐☐☐	**35. NODE MAP** ☐☐☐
১. সাধারণ রাস্তা ২. সেতু ৩. কালভার্ট ৪. সংকীর্ণ / বাধা প্রাপ্ত ৫. স্পীড ব্রেকার	১. শহর ২. গ্রাম এলাকা		**30. X** ☐☐☐☐☐☐	**33. KM** ☐☐☐	**36. NODE 1** ☐☐☐☐
			31. Y ☐☐☐☐☐☐	**34. 100m** ☐	**37. NODE 2** ☐☐☐☐

অবস্থান

নগর/শহর/গ্রাম এর নাম: .... থেকে দুরত্ব :---------------------------(কি: মি/মি)

রাস্তার নাম : .... মধ্যে ⎡ রোড / স্থান (১)................. দুরত্ব : ---------------------------(কি: মি/মি)
                                                         ⎣ রোড / স্থান (২)................. দুরত্ব : ---------------------------(কি: মি/মি)

দ্বিতীয় রাস্তার নাম (শুধু মাত্র সংযোগ স্থানের দুর্ঘটনার ক্ষেত্রে) : .... থেকে দুরত্ব :---------------------------(কি: মি/মি)

দুর্ঘটনা স্থানের রেখা চিত্র : দুর্ঘটনার স্থান থেকে নিকটবর্তী কিমি পোস্ট, সেতু বা রাস্তার সংযোগ স্থান বা অন্যান্য যে কোন স্থায়ী গুরুত্বপূর্ণ স্থাপনা হইতে দুরত্ব দেখাইয়া চিত্র	সংঘর্ষের রেখা চিত্র : দুর্ঘটনা কবলিত গাড়ি / পথচারী সমুহের চলাচলের দিক এবং অবস্থান সহ সংঘর্ষের পূর্ণ চিত্র

দুর্ঘটনার সংক্ষিপ্ত বিবরণ	সাক্ষী

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	১. নাম ও ঠিকানা --------------------------
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	২. নাম ও ঠিকানা --------------------------
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	বিবরণ লিপিবদ্ধকারী অফিসার
	নাম/ পদবি ....তারিখ
	অনুসন্ধানকারী অফিসার
	নাম/ পদবি ....তারিখ
	তদ্রাবধানকারী অফিসার
	নাম/ পদবি ....তারিখ
	আইনের ধারা
	কেসের অবস্থা ১. চার্জসীট
	               ২. ফাইনাল রিপোর্ট
	               ৩. তদন্তাধীন

যানবাহন ১	মালিকের নাম			চালক ১	নাম
মালিকের ঠিকানা				ঠিকানা	

যানবাহন প্রস্তুতকারী — রেজিস্ট্রেশন নম্বর — 38. জেলা — 39. নম্বর

ড্রাইভিং লাইসেন্স — 46. জেলা — 47. নম্বর

40. বৈধ ফিটনেস সার্টিফিকেট 1. আছে 2. নাই 3. প্রযোজ্য নয়
বীমা কৃত 1. ৩য় পার্টি 2. কম্প্রিহেনসিভ

লাইসেন্সের ধরণ এবং যানের শ্রেণী — মেয়াদ অতিক্রমের তারিখ

41. যানবাহনের ধরণ
1. বাইসাইকেল
2. রিকসা / ভ্যান
3. ঠেলাগাড়ী
4. মটর সাইকেল
5. বেবী ট্যাক্সী/CNG
6. টেম্পো
7. মাইক্রোবাস
8. মিনি বাস
9. বাস
10. কার
11. জীপ
12. পিক আপ
13. ছোট ট্রাক
14. ভারী ট্রাক
15. আর্টিকুলেটেড ট্রাক
16. ট্যাংকার
17. ট্রাক্টর
18. পথ চালিত
19. অন্যান্য ──
(নসিমন/ করিমন ইত্যাদি)

42. যানবাহন চলাচলের ধরণ
1. বামে মোড়
2. ডানে মোড়
3. 'U' মোড়
4. সহজে ছলে অন্তমন্তি অতিক্রম
5. পার্কিং
6. সোজাসুজি চলা
7. পিছনের দিকে চলা
8. হঠাৎ যাত্রা করা
9. হঠাৎ থামা / গতি কমানো
10. পার্ক/স্ট্রীড়যোগে অবস্থায়
11. অন্যান্য ──

48. চালকের লিঙ্গ
1. পুরুষ
2. স্ত্রী

49. চালকের বয়স

50. চালকের ক্ষত
F. মৃত্যু
G. মারাত্মক ক্ষত
S. সাধারণ ক্ষত
N. অক্ষত

51. মদ্যপ কিনা
1. সন্দেহ আছে
2. সন্দেহ মুক্ত

52. সীট বেল্ট / হেলমেট
1. পরিহিত
2. পরিহিত নয়

43. যানবাহনের মালামাল বোঝাই
1. অতিনসুল
2. বোঝাইহীন/ বিপদ্জনক বোঝাই

44. যানবাহনের ক্রটি
1. ক্রটি মুক্ত
2. লাইট
3. ব্রেক
4. স্টিয়ারিং
5. টায়ার
6. বহুবিধ
7. অন্যান্য ──

45. যানবাহনের ক্ষতি (দুর্ঘটনা জনিত)
1. নাই
2. সামনে
3. পিছনে
4. ডানে
5. বামে
6. ছাদে
7. বহুবিধ
8. অন্যান্য ──

যানবাহন ২	মালিকের নাম			চালক ২	নাম
মালিকের ঠিকানা				ঠিকানা	

যানবাহন প্রস্তুতকারী — রেজিস্ট্রেশন নম্বর — 38. জেলা — 39. নম্বর

ড্রাইভিং লাইসেন্স — 46. জেলা — 47. নম্বর

40. বৈধ ফিটনেস সার্টিফিকেট 1. আছে 2. নাই 3. প্রযোজ্য নয়
বীমা কৃত 1. ৩য় পার্টি 2. কম্প্রিহেনসিভ

লাইসেন্সের ধরণ এবং যানের শ্রেণী — মেয়াদ অতিক্রমের তারিখ

41. যানবাহনের ধরণ
1. বাইসাইকেল
2. রিকসা / ভ্যান
3. ঠেলাগাড়ী
4. মটর সাইকেল
5. বেবী ট্যাক্সী/CNG
6. টেম্পো
7. মাইক্রোবাস
8. মিনি বাস
9. বাস
10. কার
11. জীপ
12. পিক আপ
13. ছোট ট্রাক
14. ভারী ট্রাক
15. আর্টিকুলেটেড ট্রাক
16. ট্যাংকার
17. ট্রাক্টর
18. পথ চালিত
19. অন্যান্য ──
(নসিমন/ করিমন ইত্যাদি)

42. যানবাহন চলাচলের ধরণ
1. বামে মোড়
2. ডানে মোড়
3. 'U' মোড়
4. সহজে ছলে অন্তমন্তি অতিক্রম
5. পার্কিং
6. সোজাসুজি চলা
7. পিছনের দিকে চলা
8. হঠাৎ যাত্রা করা
9. হঠাৎ থামা / গতি কমানো
10. পার্ক/স্ট্রীড়যোগে অবস্থায়
11. অন্যান্য ──

48. চালকের লিঙ্গ
1. পুরুষ
2. স্ত্রী

49. চালকের বয়স

50. চালকের ক্ষত
F. মৃত্যু
G. মারাত্মক ক্ষত
S. সাধারণ ক্ষত
N. অক্ষত

51. মদ্যপ কিনা
1. সন্দেহ আছে
2. সন্দেহ মুক্ত

52. সীট বেল্ট / হেলমেট
1. পরিহিত
2. পরিহিত নয়

43. যানবাহনের মালামাল বোঝাই
1. অতিনসুল
2. বোঝাইহীন/ বিপদ্জনক বোঝাই

44. যানবাহনের ক্রটি
1. ক্রটি মুক্ত
2. লাইট
3. ব্রেক
4. স্টিয়ারিং
5. টায়ার
6. বহুবিধ
7. অন্যান্য ──

45. যানবাহনের ক্ষতি (দুর্ঘটনা জনিত)
1. নাই
2. সামনে
3. পিছনে
4. ডানে
5. বামে
6. ছাদে
7. বহুবিধ
8. অন্যান্য ──

হতাহত যাত্রীর বিবরণ — একজন যাত্রীর জন্য একটি লাইন পূরণ করুন — * = নীচের বক্স দেখুন

নাম ও ঠিকানা	53. ফলবাহন নং	54. লিঙ্গ	55. বয়স	56. * ক্ষত	57. * অবস্থান	58. * কার্যক্রম
1.						
2.						
3.						
4						
5.						
6.						

হতাহত পথচারীর বিবরণ — একজন পথচারীর জন্য একটি লাইন পূরণ করুন — * = নীচের বক্স দেখুন

নাম ও ঠিকানা	59. ফলবাহন নং	60. লিঙ্গ	61. বয়স	62. * ক্ষত	63. * অবস্থান	64. * কার্যক্রম
1.						
2.						
3.						

দুর্ঘটনার সহায়ক কারন
1. মাত্রাতিরিক্ত গতি
2. বেপরোয়া চালনা
3. চালকের ক্রটি
4. সামনের গাড়ির অতি সন্নিকটে চালনা
5. চালকের ভুল সংকেত
6. ভুল ওভারটেকিং
7. ভুল ভাবে মোড় নেয়া
8. মদ্যপ চালক
9. পথচারীর কার্যক্রম
10. যাত্রীর কার্যক্রম
11. খারাপ রাস্তার জন্য
12. রাস্তার জ্যামিতিক ক্রটি
13. অন্ধকার
14. গাড়ীর যান্ত্রিক ক্রটি
15. বিপদ্জনক বোঝাই
16. টায়ার বার্স্ট
17. পশুর কার্যক্রম
18. অন্যান্য ──
(যেমন: রাস্তার উপর দাসসামে/ সিটিজন জিনিস পড়ে থাকা, গতি রোধক, দুর্বল ব্রিজ / কালভার্ট ইত্যাদির কারণে)

65. ☐☐
66. ☐☐
67. ☐☐

* 56--58 এবং 62--64 এর সহায়ক বক্স

শুধুমাত্র নমুনার জন্য বৃত্ত দিবেন না	56. যাত্রীর ক্ষত / 62. পথচারীর ক্ষত	57. যাত্রীর অবস্থান	58. যাত্রীর কার্যক্রম	63. পথচারীর অবস্থান	64. পথচারীর কার্যক্রম
	F. মৃত্যু G. মারাত্মক ক্ষত S. সাধারণ ক্ষত	1. গাড়ীর ভিতরে 2. গাড়ীর বাহিরে 3. গাড়ীর ছাদে	1. নাই 2. যাত্রে উঠিতেছিল 3. যান হইতে নামিতেছিল 4. যান হইতে পড়িয়া মালদা 5. অন্যান্য	1. পথচারী পারাপারে 2. পারাপারের ৫০ মিঃ মধ্যে 3. সড়ক দ্বীপ / ডিভাইডারে 4. রাস্তার উপরে 5. ফুটপাতে 6. রাস্তার পাশে/ সোল্ডারে 7. বাস ষ্টপে	1. নাই 2. রাস্তা পারাপার হওয়া 3. রাস্তার উপর দিয়ে চলা 4. রাস্তার পাশে/ সোল্ডার দিয়ে চলা 5. রাস্তার উপরে খেলা করা

Appendix – B

1. ACCIDENT REPORT NO.	**BANGLADESH POLICE** Register of Road Traffic Accident (REPORT FORM) [Regulation 254(b)]	3. THANA
2. FIR NO.		4. DISTRICT/MET. POL.

5. NUMBER OF VEHICLES INVOLVED		9. ACCIDENT SEVERITY	DATE OF OCCURRENCE	11. DATE 12. MONTH 13. YEAR
6. NUMBER OF DRIVER CASUALTIES		F. Fatal Accident / G. Grievous Accident / S. Simple Injury Accident / M. Motor Collision	14. TIME OF OCCURRENCE
7. NUMBER OF PASSENGER CASUALTIES			Date Of Reporting
8. NUMBER OF PEDESTRIAN CASUALTIES		10. DAY	Time Of Reporting

15. JUNCTION TYPE
1. Not at Junction
2. 3. 4. 5. 6. Railway 7. Other

16. TRAFFIC CONTROL
1. No Control 2. Centreline 3. Pedestrian Crossing 4. Police Controlled 5. Traffic Lights 6. Police + Traffic Lights 7. Stop/Give Way sign 8. Other

17. COLLISION TYPE
1. Head On 2. Rear End 3. Right Angle 4. Side Swipe 5. Overturned Vehicle 6. Hit Object in Road 7. Hit Object off Road 8. Hit Parked Vehicle 9. Hit Pedestrian 10. Hit Animal 11. Other

18. MOVEMENT
1. 1-Way Street 2. 2-Way Street

19. DIVIDER ?
1. Yes 2. No

20. WEATHER 1. Fair 2. Rain 3. Wind 4. Fog
21. LIGHT 1. Daylight 2. Dawn/Dusk 3. Night (lit) 4. Night (unlit)
22. ROAD GEOMETRY 1. Straight + Flat 2. Curve Only 3. Slope Only 4. Curve + Slope 5. Crest
23. SURFACE CONDITION 1. Dry 2. Wet 3. Muddy 4. Flooded 5. Other
24. SURFACE TYPE 1. Sealed 2. Brick 3. Earth
25. SURFACE QUALITY 1. Good 2. Rough 3. Under Repair
26. ROAD CLASS 1. National 2. Regional 3. Feeder 4. Rural Road 5. City

27. ROAD FEATURE 1. None 2. Bridge 3. Culvert 4. Narrowing/Restriction 5. Speed Breakers
28. LOCATION TYPE 1. Urban Area 2. Rural Area
OFFICE USE ONLY 29. XY MAP 30. X 31. Y
32. ROUTE 33. KM 34. 100m
35. NODE MAP 36. NODE 1 37. NODE 2

LOCATION
Name of City/Town/Village .... Distance: .... (km/m)
Name of Road .... Between Landmark 1 .... Distance: .... (km/m)
Landmark 2 .... Distance: .... (km/m)
JUNCTION ACCIDENT ONLY Name of SECOND Road .... Distance: .... (km/m)

LOCATION SKETCH Show site in relation to prominent landmarks such as KM posts, bridges or road intersections. Mark distances to the landmarks

COLLISION DIAGRAM SKETCH mark the position and direction of each vehicle and details of the road layout at the site of the accident

SUMMARY OF ACCIDENT
....

WITNESSES
1. Name & Address ....
2. Name & Address ....
RECORDING OFFICER
Name/Rank .... Date ......
INVESTIGATING OFFICER
Name/Rank .... Date ......
SUPERVISING OFFICER
Name/Rank .... Date ......
SECTION OF LAW
STATUS OF CASE 1. Charge Sheet 2. Final Report 3. Under Investigation

Contd P/2

50

Additional form(s) will be needed if there are more than 2 vehicles, more than 6 passenger casualties or more than 3 pedestrian casualties
Mark each additional form with the REPORT NUMBER, THANA, DISTRICT/MET POL. and YEAR. Fix forms together

VEHICLE 1

OWNER'S NAME

OWNER'S ADDRESS

VEHICLE MANUFACTURER	VEHICLE REGISTRATION	
	38. DISTRICT	39. NUMBER

40. VALID FITNESS CERTIFICATE   1. Yes   2. No   3. n/a | INSURANCE COVER   1. Third Party   2. Comprehensive

41. VEHICLE TYPE

1. Bicycle	7. Microbus	13. Truck (<3.5t)
2. Rickshaw	8. Minibus	14. Heavy Truck
3. Push Cart	9. Bus	15. Artic. Truck
4. Motor Cycle	10. Car	16. OilTanker
5. Baby Taxi	11. Jeep	17. Tractor
6. Tempo	12. Pick Up	18. Animal Drawn
		19. Other ....

42. VEHICLE MANOEUVRE

1. Left Turn   7. Reversing
2. Right Turn   8. Sudden Start
3. 'U' Turn   9. Sudden Stop
4. Crossing Road   10. Parked
5. Overtaking   11. Other
6. Going Ahead   ....

43. VEHICLE LOADING
1. Legal
2. Illegal/Unsafe

44. VEHICLE DEFECT (from MVI report)
1. None   5. Tyres
2. Lights   6. Multiple
3. Brakes   7. Other
4. Steering

45. VEHICLE DAMAGE (Sustained in accident)
1. None   5. Left
2 Front   6. Roof
3. Rear   7. Multiple
4. Right   8. Other ....

DRIVER 1   NAME

ADDRESS

DRIVING LICENSE

46. DISTRICT   47. NUMBER

LICENSE TYPE + CATEGORY   EXPIRY DATE

48. DRIVER SEX
1. Male
2. Female

50. DRIVER AGE

49. DRIVER INJURY
F. Fatal
G. Grievous
S. Simple Injury
N. Not Injured

51. ALCOHOL
1. Alcohol Suspected
2. Not Suspected

52. SEAT BELT/HELMET
1. Seat Belt/Helmet Worn
2 Not Worn

VEHICLE 2

OWNER'S NAME

OWNER'S ADDRESS

VEHICLE MANUFACTURER	VEHICLE REGISTRATION	
	38. DISTRICT	39. NUMBER

40. VALID FITNESS CERTIFICATE   1. Yes   2. No   3. n/a | INSURANCE COVER   1. Third Party   2. Comprehensive

41. VEHICLE TYPE

1. Bicycle	7. Microbus	13. Truck (<3.5t)
2. Rickshaw	8. Minibus	14. Heavy Truck
3. Push Cart	9. Bus	15. Artic. Truck
4. Motor Cycle	10. Car	16. OilTanker
5. Baby Taxi	11. Jeep	17. Tractor
6. Tempo	12. Pick Up	18. Animal Drawn
		19. Other ....

42. VEHICLE MANOEUVRE

1. Left Turn   7. Reversing
2. Right Turn   8. Sudden Start
3. 'U' Turn   9. Sudden Stop
4. Crossing Road   10. Parked
5. Overtaking   11. Other
6. Going Ahead   ....

43. VEHICLE LOADING
1. Legal
2. Illegal/Unsafe

44. VEHICLE DEFECT (from MVI report)
1. None   5. Tyres
2 Lights   6. Multiple
3. Brakes   7. Other
4. Steering

45. VEHICLE DAMAGE (Sustained in accident)
1. None   5. Left
2 Front   6. Roof
3. Rear   7. Multiple
4. Right   8. Other ....

DRIVER 2   NAME

ADDRESS

DRIVING LICENSE

46. DISTRICT   47. NUMBER

LICENSE TYPE + CATEGORY   EXPIRY DATE

48. DRIVER SEX
1. Male
2. Female

50. DRIVER AGE

49. DRIVER INJURY
F. Fatal
G. Grievous
S. Simple Injury
N. Not Injured

51. ALCOHOL
1. Alcohol Suspected
2. Not Suspected

52. SEAT BELT/HELMET
1. Seat Belt/Helmet Worn
2 Not Worn

PASSENGER CASUALTIES   Complete 1 FULL line for each passenger casualty   * = See Reference boxes below

NAME AND ADDRESS	53. VEH. NO	54. SEX	55. AGE	56.* INJURY	57.* POSITION	58.* ACTION
1.						
2.						
3.						
4.						
5.						
6.						

PEDESTRIAN CASUALTIES   Complete 1 FULL line for each pedestrian casualty   * = See Reference boxes below

NAME AND ADDRESS	59. VEH. NO	60. SEX	61. AGE	62.* INJURY	63.* LOCATION	64.* ACTION
1.						
2.						
3.						

FOR REFERENCE ONLY DO NOT CIRCLE	56. PASSENGER INJURY 62. PEDESTRIAN INJURY F. Fatal G. Grievous Injury S. Simple Injury	57. PASSENGER POSITION 1. Inside Vehicle 2. Outside Vehicle 3. On Roof	58. PASSENGER ACTION 1. No action 2. Boarding 3. De-boarding 4. Falling off 5. Other	63. PEDESTRIAN LOCATION 1. On pedestrian crossing 2. Within 50m of ped.crossing 3. Central island/divider 4. Road centre 5. Footpath 6. Road side 7. Bus stop	64. PEDESTRIAN ACTION 1. No action 2. Crossing the road 3. Walking along the road 4. Walking along road side 5. Playing on the road

CONTRIBUTORY FACTORS
1. Speeding
2. Careless driving
3. Driver fatigue
4. Driving too close
5. Bad driver signals
6. Bad overtaking
7. Bad turning
8. Drunk driver
9. Pedestrian action
10. Passenger action
11. Road condition
12. Road Feature
13. Weather
14. Vehicle Defect
15. Unsafe Loading
16. Tyre Burst
17. Animal Action
18. Other ....

65.
66.
67.

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